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ABSTRACT

The premise that additional cooperation between the librarian and classroom teacher promoted acquisition of library skills, was investigated. The mutually exclusive subhypotheses were also tested. Twenty senior high school students in two small Mono County, California high schools served as the target population for the study. The experimental group was taught some units of library instruction by a classroom teacher-librarian teaching team. The control group received their library instruction from their regular teacher. The course outline used during instruction was identical for both groups. Pretest and posttest scores on a test of library skills were compared statistically using the mean, standard deviation, and t-tests. The students taught cooperatively by the classroom teacher and the librarian made significantly higher scores; however, both groups made significant increases in their acquisition of library skills. Null hypotheses were accepted for each of the three subhypotheses. Another research study involving larger groups of students, teachers, and librarians using the research design of this project to validate or invalidate the findings was recommended. Appendices include the library skills test used in the study, student responses to selected questions, library instruction samples, sources cited, and references. (Author/JPF)

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LIBRARY INSTRUCTION AND TEAM TEACHING

by

Arlene Hadfield Reveal

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

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ABSTRACT

The premise, that additional cooperation between the librarian and classroom teachers promoted student acquisition of library skills, was investigated.

No concensus was evident in the literature about which teaching mode--classroom teacher, or classroom teacher--librarian teaching team--was more effective for teaching library skills.

Target population for the research project was the students in two small high schools in Mono County, California.

Random and matching t-tests were used to measure the significance of the difference of student acquisition of library skills based on pretest and posttest results. The students taught cooperatively by the classroom teacher and the librarian made significantly higher scores.

Student deficiencies were identified in alphabetizing, in library terminology, in biographical shelf arrangement, and in filing catalog card entries about history in chronological and alphabetical order.

The total student population in this project was 20 individuals. Because of the small sample size, the recommendation is made that the project be replicated with a larger project population, before the findings are applied to library instruction programs.

ACKNOWLEDGEMENTS

The support of Carl E. Burson, Jr., Superintendent of Mono County Office of Education, his staff, and the staffs and students of Coleville High School and Lee Vining High School made the completion of this project a reality.

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My son, Dr. James L. Reveal, and his family merit a special reward for helping put grandmother through graduate school.

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Chapter 1

INTRODUCTION

Exponential increases in the amount of recorded knowledge created a need for students to learn methods and skills for locating and acquiring information efficiently. To meet this need, library instruction programs were developed for teaching students how to use the library and its resources.

Historically and currently problems about library instruction were debated by classroom teachers and librarians--who was to teach the courses, what was to be taught, when and where was instruction to take place.

STATEMENT OF PROBLEM

Variance in student acquisition of library skills, when library instruction was taught by the classroom teacher or when a teaching team of classroom teacher and librarian taught the course, was investigated.

DELINEATION

High school students included in this study were members of the twelfth grade classes in two small Mono County, California high schools, located on the eastern slope of the High Sierra. Each of the schools had a total

enrollment of fewer than ninety students.[1]

Library instruction units, developed jointly by the librarian and the classroom teachers and taught by the classroom teachers, consisted of the bibliographic skills of locating and using library materials. Selected units of the course were taught to an experimental group by the librarian with the assistance of the classroom teacher.

DELIMITATIONS

Outside the scope of this study were the following elements:

1. The content and quality of commercial courses of study and tests on the acquisition of library skills
2. The when and where library instruction should be taught
3. Programmed instruction systems designed to teach knowledge of, and techniques for, using library facilities and materials
4. A comparison of the teaching abilities and the teaching techniques of the classroom teacher and librarian
5. Library instruction programs for adults, for students in kindergarten through the eleventh grade, for college or university students, or for students in adult education classes

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[1] Statement by Beatrice Palmer, Deputy Superintendent of the Mono County Office of Education, in a personal interview, Bridgeport, California, July 2, 1976.

DEFINITIONS

Bibliographic Skills. The term is used synonymously with library skills. Both refer to the skills and techniques needed to locate, organize, and retrieve information. Typical skills included the use of the card catalog, the reference interview, alphabetizing, and data banks.

Team Teaching. The classroom teacher-librarian cooperation inside the classroom.

Librarian. The professionally trained, credentialed individual who administered the library program. Other titles for the position include media specialist, media coordinator, audiovisual director, educational media supervisor, instructional services consultant, etc.

Library. The physical facility where equipment and media were housed, organized, and used; also called a media center, an instructional materials center, etc.

Library Resources. Information sources mediated by the librarian, including all forms and channels used for transmitting information to the user.

Library Instruction Programs. Courses of study developed to help students learn to locate and utilize information and its technology.

Search Skills. A collection of skills and techniques utilized by library users and librarians to facilitate interpersonal communication for the purpose of locating and retrieving information from all available sources.

Chapter 2

LITERATURE SEARCH

Publications about library instruction and classroom teacher-librarian cooperation were extensive over the past fifty years. Representative samples were included.

CLASSROOM TEACHER AND LIBRARIAN COOPERATION

Library and education publications had articles about classroom teacher or librarian responsibility for teaching library skills. Some authors advocated cooperation. Others argued that the teaching of library skills was the prerogative of the education professional, the teacher. A third group believed that librarians were to teach the courses because of their expertise in the field.

Joseph F. Connelly sharply divided the duties of the classroom teacher and the librarian. The librarian was to "instruct the pupils so they gain the ability to use the library easily and effectively," to "widen the pupils' reading interests," to "aid pupils in forming correct library habits," and to "give instruction in the use of the books." The classroom teacher was expected to "become acquainted with the library," to "make clear and definite assignments," to "give instruction in note taking,"

to "help create the right attitudes toward the library," and "to refrain from sending pupils to the library to get rid of them."[1]

Elizabeth Griggs, librarian at Grant High School in Portland, Oregon, suggested that librarians teach the mechanics of library use only when the students need them for a research project. "But all teaching should be at a very minimum, for the librarian belongs in her library." According to Miss Griggs, the librarian was to spend her time promoting a love of reading.[2]

Support for teacher instruction of library skills was expressed by Maurine S. Hardin, librarian at the Technical High School in Oakland, California.

> We believe that it is preferable to have the teacher introduce library tools in the classroom. The timing is better, the student acquires greater skill in the use of the tool in relation to the assignment. . . . [italics hers]
>
> Each school must determine where the teaching of the card catalog, the reference books, the use of the Readers' Guide best fits into its curriculum, and which subject teachers should be responsible for the teaching.[3]

June Berry and Winston Mercer of the Secondary Laboratory School at Brigham Young University in Provo,

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[1]Joseph F. Connelly, "What Librarian May Expect of Teacher. What Teacher May Expect of Librarian," Library Journal, 57 (September 1, 1932), 729-30.

[2]Elizabeth Griggs, "Made to Order Library Instruction," Wilson Bulletin for Librarians, 13 (February, 1939), 391.

[3]Maurine E. Hardin, "We Begin in the Classroom," Library Journal, 78 (June 15, 1953), 1078.

Utah, indicated that it made no difference who taught library instruction because the instruction was what was important, not the instructor. However, they added, regardless of who gave the formal instruction, the other was to be an assistant and a co-teacher. The authors presented some reservations about the librarian being the only instructor of library skills.

> The librarian, in her earnest desire to tell the world about her wares, may be inclined to include more information than is necessary to meet the immediate needs of the particular class. It is the responsibility of the classroom teacher to clarify objectives and limit the skills to be taught.[1]

Berry and Mercer concluded:

> The challenge to teachers is obvious. They must look into their texts, into their teaching to see where library use may be integrated with their subjects. It is the teacher's responsibility to acquaint boys and girls with the essential library resources and skills to fulfill their immediate academic needs, to supplement their classroom work, and to acquire the library habit for future use.[2]

The popularization of team teaching concepts promoted cooperative instruction. Betty Fast, director of library services in Groton, Connecticut, claimed that:

> Cooperation of librarian and teacher was a form of "team teaching' even before the term and method came into general use. Careful cooperative planning makes the team function effectively.[3]

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[1] June Berry and Winston Mercer, "Developing Library Skills: Every Teacher's Responsibility," Utah Libraries, 2 (Fall, 1958), 19.

[2] Ibid, p. 20.

[3] Betty Fast, "Teachers and Librarians: Stage Managers for the Learning Program," Childhood Education, 43 (October, 1966), 73.

Ira J. Singer, Staff Associate on the Committee on Staff Utilization of the National Association of Secondary School Principals, wrote that the team teaching librarian needed to be more concerned about teaching than procedures, less of a technician, more of a consultant, and more of a specialist in the teaching field. The librarian should, said Singer, ". . .exercise her skill and talent in the practice of library education."[1]

Librarian and classroom teacher cooperation in areas other than the teaching of library skills was noted by Ruth Ann Davies, author of several texts on school libraries.

> Today's library media specialist is a teacher directly involved in the total teaching and learning process: . . . functioning as a planning-working member of teaching teams; planning with individual teachers and committees of teachers for the integration of the resources and services of the library media center with the day-to-day ongoing teaching and learning program.[2]

Nancy Polette, also an author on school libraries, advocated that the librarian work with the classroom teacher to promote the use of the library program.

> It is important to realize that the teacher is a trained professional and that, while he may lack specific knowledge in one field, his expertise in the teaching process and his knowledge of child growth and development should be utilized in cooperative planning sessions. . . . Tact, helpfulness and cooperation are the bywords for media personnel in working with the classroom teacher. The teacher's knowledge of his

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[1]Ira J. Singer, "Team Teaching and the School Librarian," School Libraries, 11 (October, 1961), 38.

[2]Ruth Ann Davies, The School Library Media Center (2d ed.; New York: R. R. Bowker Company, 1974), p. 96.

> student's needs and of the demands of the curriculum, combined with the librarian's knowledge of material, can provide for a successful learning environment.[1]

Jean E. Lowrie, professor in the Department of Librarianship at Western Michigan University, advocated an extension of the librarian's role as a teacher.

> The librarian can be a master teacher. Her background in many areas of knowledge, her understanding of child growth and development, her ability to employ good teaching methods in either the library or the classroom, her familiarity with instructional materials, equip her to become a teacher of teachers.[2]

More information on the cooperative teaching of library skills by classroom teachers and librarians was found on the college and university level than on the high school level. The Drexel Library Quarterly devoted two complete issues to library instruction programs.[3]

TEAM TEACHING

Team teaching became popular in the late 1950s and the early 1960s, when articles and books on the subject proliferated. This innovative method of teaching was found in many forms, and was defined as:

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[1]Nancy Polette, Developing Methods of Inquiry (Metuchen, N. J.: The Scarecrow Press), p. 58.

[2]Jean E. Lowrie, "Team Teaching. . . The Creative Elementary School Library," Wilson Library Bulletin, 36 (October, 1961), 129.

[3]"Integrating Library Instruction in the College Curriculum," Drexel Library Quarterly, 7 (July and October, 1971), 167-378; see also "Library Instruction, Methods, Materials, Evaluation," Drexel Library Quarterly, 8 (July, 1972), 215-374.

> . . . a form of organization in which individual teachers decide to pool resources, interests, and expertise in order to devise and implement a scheme of work suitable to the needs of their pupils and the facilities of their school.[1]

According to Harold S. Davis, the teaching relationship of the classroom teacher and the librarian was that of a "synergetic team" consisting of two or more teachers willing to cooperate as professional equals. In contrast were the "hierarchic teams" which included one master or team teacher, plus one or more regular teachers, or, most frequently, one or several aides or interns.[2]

LIBRARY INSTRUCTION

Guides for teaching library skills to senior high school students consisted primarily of lists of specific reference works with descriptions of their contents and instructions for their use.[3] A bibliography of materials for library instruction by Shirley Hopkinson of San Jose

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[1] David Warwick, Team Teaching (London: University of London Press, Ltd., 1971), p. 18.

[2] Harold S. Davis, How to Organize an Effective Team Teaching Program, Successful School Management Series (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1966), p. 13.

[3] Detroit Public Schools. Division for the Improvement of Instruction. Department of School Libraries, Curriculum for the School Librarian in the High School (Detroit: Detroit Board of Education, 1962); see also Violet F. Peterson, Library Instruction Guide (3d ed.; Hamden, Connecticut: Shoe String Press, 1967); see also Martin Rossoff, The Library in High School Teaching (2d ed.; New York: The H. W. Wilson Company, 1961).

State University identified available nonprint instructional aids.[1] No guide for the teaching of increasingly difficult library skills in a sequential pattern was located, so the librarian developed one which included skills for senior high school students.[2]

SIMILAR STUDIES

Florence G. Gleeson in her 1951-52 investigation of library instruction in nine New Jersey high schools identified a need

> . . . for greater integration of this instruction with classroom activities, . . . and a broader recognition of the importance and significance of an adequate program of library instruction.[3]

In 1967, Sister Marie Monica Dillon found that library use increased after high school juniors were taught a formal course in library skills by the librarian.[4]

A statistical study of the responses given by 204 Brigham Young University freshman English students to the

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[1] Shirley L. Hopkinson, Instructional Materials for Teaching the Use of the Library (4th ed.; San Jose, California: Claremont House, 1971).

[2] Arlene Hadfield Reveal, "Learn Library Skills," (Bridgeport, California: Mono County Office of Education, 1976). (Offset Press).

[3] Florence G. Gleeson, "Study of Library Instruction in Nine New Jersey High Schools, 1951-52" (unpublished MLS thesis, Drexel University of Technology, 1952).

[4] Sister Marie Monica Dillon, "Study of the Pattern of Use in Inquiry of a High School Library by Juniors formally Instructed in Library Procedures" (unpublished MA thesis, University of Chicago, 1967).

question of who taught their course of library instruction in high school was made by Sharon E. Leigh during the summer of 1970. She reported that 47.55 percent of the students named English teachers as their instructor in library skills; 43.14 percent said the librarian had taught them how to use the library. Other teacher involvement in library instruction was negligible.[1]

Rate of gain in the knowledge of library skills by students at the Pleasant Grove High School during the 1964-65 school year was investigated by Maude H. Jacobs. Three instructor patterns were used: formal (librarian alone), integrated (classroom teacher alone), and formal-integrated (cooperative instruction by the librarian and the classroom teacher). No significant difference between the instructor pattern and the acquisition of library skills was found.[2]

SUMMATION OF THE LITERATURE SEARCHED

Both positive and negative attitudes toward the need and value of cooperation between the classroom teacher and the librarian as instructors of library skills

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[1] Sharon C. Leigh, "Statistical Survey of Instruction in the Use of the Library Received by Brigham Young University Freshmen in the Secondary Schools Which They Attended," (unpublished research project, Brigham Young University, 1970), p. 30.

[2] Maude H. Jacobs, "A Comparison of Instructional Methods in Teaching Library Skills in High School," (unpublished MA thesis, Brigham Young University, 1965).

were identified in the literature. No consensus or trends developed. The advent of team teaching resulted in a movement toward additional cooperative teaching by teachers and librarians.

The possibility of a correlation between instructor patterns and increased learning of library skills was researched by Jacobs. She recommended that her research be repeated.[1]

Rossoff's statement encapsulated the literature search on library instruction.

> . . . There has been little formal research on the content of library instruction, the methods used, the relative effectiveness of the different approaches, or the benefits to be derived.[2]

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[1] Ibid., pp. 68-69.

[2] Martin Rossoff, The School Library and Educational Change, Library Science Text Series (Littleton, Colorado: Libraries Unlimited, Inc., 1971), p. 69.

Chapter 3

METHODOLOGY

Experimental and control groups were differentiated on the basis of instructor pattern. The experimental group was taught some units of library instruction by a team teaching librarian and classroom teacher. The control group recieved their library instruction from their regular teacher.

Pretest and posttest scores on a test of library skills were compared statistically using the mean, standard deviation, and t-tests.

POPULATION

Twelfth grade students enrolled in college preparatory classes at Coleville High School in Coleville, California, and at Lee Vining High School in Lee Vining, California during the 1974-76 school years participated in the project.

Twelve of Lee Vining High School's graduating class of 16 students were enrolled in a Senior Problems class. Ten of the students completed both the pretest and the posttest and were included in the experimental group.[1]

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1 Statement by James Kirk, high school teacher and counselor, in a personal interview, Lee Vining, California May 5, 1976.

Of the Coleville High School's graduating class of 22 students, 16 were enrolled in an elective Advanced English class.[1] Twelve students completed the pretest and the posttest. A random number table was used to reduce the number in the group to 10 to match the experimental group.

Students not completing both the pretest and the posttest were dropped from the project. Other students were eliminated because they graduated at mid-year, transferred to another school before the project ended, or enrolled in the schools after the project started.[2]

CONTROL OF VARIABLES

Pretests (See Appendix A, pp. 34-43 for a copy of the test instrument) were given to determine if any difference was evident between group scores on a test of library skills. The same test was used for the posttests.

Instructional programs for library skills were based on the same course outline. Lesson plans prepared by the teachers and the librarian varied.

Members of both senior classes visited a large university research library during the school year. Lee Vining High School students went to the University of

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[1] Statement by Danny Howerton, school counselor, in a personal interview, Coleville, California, May 3, 1976.

[2] Statement by Erma Thomas, school secretary, in a personal interview, Coleville, California, December 8, 1975. During November, 1975, 6 students transferred into Coleville High School, increasing the school population by almost 7 percent.

California at Davis, California.[1] Coleville High School students visited the Sacramento State University Library in Sacramento, California.[2]

Interviews were held with high school counselors to survey college plans for members of both groups. The librarian compiled the survey on parental occupations used to investigate the socio-economic backgrounds of the students.

INSTRUCTIONAL DESIGN

The library instruction course outline was prepared by the librarian; specific lesson plans were developed by the classroom teachers. All instruction of the control group was taught by the classroom teacher, except the annual orientation to new library materials conducted by the librarian. Units on search skills were taught to the experimental group by the librarian with the assistance of the classroom teacher. (See Appendix C, pp. 46-72 for materials used by the librarian.) Other units were taught to the experimental group by the classroom teacher.

LIBRARY SKILLS TEST

The library skills test selected for use in the project had been the library skills test of the La Mesa-Spring Valley School District adjacent to San Diego, California. (See Appendix A, pp. 34-43). The test instrument included 67

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[1]Kirk, loc. cit. [2]Howerton, loc. cit.

questions on the use of the card catalog, alphabetizing, use and content of reference materials, parts of books, shelving of biographical works, the Dewey Decimal Classification system, and the Reader's Guide to Periodical Literature. No coefficients of validity or reliability were established for this test.

"How Much Do You Know about Books and Libraries," an 80 question library skills test developed by Mary Virginia Gaver[1] and amplified with 20 additional questions prepared by Maude H. Jacobs,[2] was investigated for use as a test instrument. This test was used by Lucile M. Thorne in her dissertation on the influence of the Knapp School Libraries Project on the knowledge of library skills of students in Farrer Junior High School, in Provo, Utah.[3] The Gaver-Jacobs test was rejected because the cataloging varied from the pattern used in the Mono County schools, and some of the reference works were no longer current--Book of Knowledge is now the New Book of Knowledge, Our Wonderful World is out of print.

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[1]Mary Virginia Gaver, Effectiveness of Centralized Library Service in Elementary Schools (2d ed.; New Brunswick, New Jersey: Rutgers University Press, 1963), pp. 23-48, cited in Jacobs, op. cit., p. 9.

[2]Jacobs, op. cit., pp. [84]-101.

[3]Lucile M. Thorne, "The Influence of the Knapp School Libraries Project on the Reading Comprehension and on the Knowledge of Library Skills of the Pupils at the Farrer Junior High School Provo, Utah" (unpublished EdD dissertation, Brigham Young University, 1967), pp. 98-115.

"The Peabody Library Information Test," developed by Louis Shores and Joseph E. Moore and included in the Thorne dissertation, was not used because of cataloging discrepancies and an elementary list of periodicals.[1]

No other standardized tests of library skills were evaluated for use in the project.

COMPARISON OF TEST RESULTS

Tests were hand scored. Individual scores on both pretests and posttests were totaled separately for the control group and the experimental group. Mean, mode, median, and standard deviation were computed for group scores on the pretest and the posttest. Random t-test was used to evaluate the significance of the differences between the groups on the pretest and the posttest.

Differences were computed between each student's score on the pretest and his score on the posttest. The mean, mode, and median for each group were calculated. The matching t-test was used to assess the difference between the pretest scores and the posttest scores for each group. The random t-test was used to determine the variance in scores between the experimental group and the control group in the acquisition of library skills.

Comparisons were made between the mean and standard deviation computed for each group. Similarities and

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[1] Ibid.

differences between the control group and the experimental group were tested for significance by using the random and matching t-tests.

RECOMMENDATIONS

Suggestions were made for the improvement of the various components of the library instruction program. Areas treated included team teaching, modes of instruction, teaching techniques, tests, and subject content.

Research projects based on the findings of this study were recommended. Projects in related areas were identified for future investigation.

The recommendation was made that this project be replicated with a larger population of students and faculty. The small sample size limited the usefulness of the project to provide realistic or valid answers to the problems investigated. Applications of the findings to other groups and situations should reflect these reservations.

Chapter 4

DATA ANALYSIS

Statistical evaluation of test scores and surveys of college plans of students and the occupational background of their parents were analyzed.

STUDENTS' COLLEGE PLANS

Student college selection by control and experimental grouping were shown in Table 1.

Table 1

College Choices

Type of College	Control	Experimental	Total
Four-year college or university	2	2	4
Junior college	7	5	12
Private college		1	1
Technical school		1	1
No choice	1	1	2
Total	10	10	20

Of the group of 20 students surveyed, 18 had completed their college entrance plans, only 2 were undecided.

Twelve students will attend junior college, 14 will go to two-year schools before transferring to larger schools. Four-year colleges and universities will be attended by 4 students, 2 from each group.

OCCUPATION OF PARENTS

The control group's parents participated in 8 different occupations; the parents of the experimental students engaged in 6 different types of work. The majority of the parents were owners or operators of businesses. The survey of parental occupations was shown in Table 2 on page 22.

PRETESTS

Correct answers to questions on the library skills test ranged from 32 to 46 for the control group at Coleville High School. Lee Vining High School students in the experimental group showed a range of 30 to 52 correct answers in their test scores. The maximum number of correct answers was 67 for each student or a total of 670 for each group. Control group scores were 407 with a mean of 40.7 and a standard deviation of 3.96. The scores had a median of 41.5 and a mode of 40.

The experimental group scores amounted to 404, with a mean of 40.4 and a standard deviation of 7.03. The median was 40.5. No students in this group had the same number of correct answers so no computation could be made for the mode.

Table 2

Occupation of Parents

Occupation	Control	Experimental	Total
Banker	1		1
Businessman	2	3	5
Janitor	1		1
Laborer		1	1
Motel Owner	1	2	3
Power Plant Operator		1	1
Rancher	2		2
School Employee	1	1	2
Service Station Owner		2	2
Teacher	1		1
Waitress	1		1
Total	10	10	20

Pretest results for both groups were exhibited in Table 3.

Table 3

Pretest on Library Skills

Group	N	Total Score	Mean	Standard Deviation
Control	10	407	40.7	3.96
Experimental	10	404	40.4	7.03

POSTTESTS

Posttest scores for the control group totaled 461 points. The mean was 46.1, the standard deviation 3.45, the median 47. The primary mode was 47 and the secondary mode was 44. The experimental group had 464 correct answers with a mean of 46.4, a standard deviation of 5.36, a median of 45, and a mode of 42. Table 4 showed the test results.

Table 4

Posttest on Library Skills

Group	N	Total Score	Mean	Standard Deviation
Control	10	461	46.1	3.45
Experimental	10	464	46.4	5.36

The experimental group had the lowest score in the pretest and the highest score in the posttest.

COMPARISON OF STUDENT VARIANCE

The increase in number of correct answers on the test of library skills was 60 for the experimental group and 54 for the control group. The scores ranged from gains of 2 to gains of 12 for the experimental group and 1 to 10 for the control group. Using the matched t-test to compare the gains in individual scores for each group, the experimental section gained 5.934, the control group 5.510.

Further comparison of the gain in number of correct answers about library skills was made with the random t-test. Control group scores had a mean of 5.4 and a standard deviation of 2.70. For the experimental group, the mean was 6.0 and the standard deviation 2.97. Table 5 demonstrated the variance between the two groups.

Table 5

Comparison of Gains

Group	N	Total Score	Mean	Standard Deviation
Control	10	54	5.4	2.70
Experimental	10	60	6.0	2.97

Chapter 5

SUMMARY AND CONCLUSIONS

Variance in student acquisition of library skills as related to mode of instruction was the primary problem investigated in this project.

The research design involved control and experimental groups of students attending the twelfth grade in two small high schools in Mono County, California. The control group received their library instruction from the classroom teacher. Cooperative teaching by the librarian and the classroom teacher was the instructor mode for the experimental section. The test and course outline were identical for both groups.

The two groups were given pre- and posttests to measure any difference in student learning of library skills and if that difference was attributable to the mode of instruction. Random and matching t-tests were used to compute the significance, if any, in the variance of student learning of library skills.

FINDINGS

College Choice

Seventy percent of the control group at Coleville High School decided to attend junior colleges. Sixty

percent of the experimental group at Lee Vining High School selected two year colleges; 50 percent were junior colleges, 10 percent were private colleges. Twenty percent of the students in both groups were accepted for admittance into four-year colleges and universities. Ten percent of the students in each group did not apply for college entrance. Ninety percent of the students in both groups had similar college choices. The groups were alike in college planning and types of colleges selected.

Occupation of Parents

Sixty percent of the parents of control group students owned or operated their own businesses or ranches. Seventy percent of the parents of the experimental section students were owners or operators of private businesses. Ten percent of the parents in each group were, respectively, unskilled workers and school employees. Seventy percent of the parents in the two groups had similar occupations, an indication that students in both groups had parallel socio-economic backgrounds.

Pretests

The variance between the total scores on the test of library skills was 3 points. The difference between the scores made by the control group and those of the experimental group was significant at the .3 level, but not at the .05 level. The two groups had comparable library skills at the beginning of the project.

Posttests

The experimental group scored 3 points higher than the control group on the posttest. The difference between the scores of the two groups was significant at the .2 level, but not at the .05 level. The groups were similar in their knowledge of library skills at the end of the project.

Comparison of Gain

Both groups made significant increases in their acquisition of library skills. The experimental group made the greatest increase in number of correct answers on the library skills test which was used as a measure of the gains made in learning library skills. Using the matched t-test, gains for both groups in the posttest over the pretest were significant at the .01 level. The gains of the experimental group over those made by the control group were also significant at the .01 level.

Research Library Visitation

Both high schools took their students to large research libraries during the school year. At the experimental site, the visitation was made a part of the library instruction program. Students returned from the trip with renewed enthusiasm for the learning of library skills. No assessment was made of the effect of the visitation on the control group at Coleville High School. This event might have biased the research design.

Comments from students about the project ranged from "What a bore!" to "I need to know everything." Samples of student comments and their requests for additional help in learning about library skills are listed in Appendix B, page 45.

TESTING THE HYPOTHESES

The major hypothesis of this project was that more cooperative teaching by the librarian and the classroom teacher increased student acquisition of library skills. The hypothesis was accepted as being correct because the gains made by the experimental over those made by the Coleville control group were significant at the .01 level of confidence.

Null hypotheses were accepted for each of the three sub-hypotheses.

1. Students scored lower on a library skills test following instruction by a teaching team of librarian and classroom teacher. Students scored higher, not lower, on the posttest which followed instruction by the team teachers. Gains were significant at the .01 confidence level.

2. Students scored lower on tests of library skills following instruction by the classroom teacher. Students again scored higher rather than lower on the posttest. Matching t-tests established that the increase in the knowledge about library skills between the pretest and the posttest was significant at the .01 confidence level for both

groups.

3. No significant difference was found between the scores of the experimental group and the control group due to the mode of instruction. The null hypothesis was accepted because the difference between the gains made by the experimental group over those of the control group was significant at the .01 confidence level.

RELATED FINDINGS

Ancillary results of the research, germane to librarianship but not in the research design, were identified. The two areas were the maximal and minimal errors on the test, and the public relations value of team teaching.

Test Question Errors

Two test questions were answered correctly by all students. One question related to the location of the word "witchcraft" in the card datalog drawer; the other question required the identification of a news magazine. (Refer to the test instrument on pages 34-43 in Appendix A.) The question requiring a "call number" as an answer was missed by 100 percent of the students. The alphabetical and chronological arrangement of catalog cards in the history subdivisions was answered incorrectly by 92.5 percent of the people taking the test. Four questions on alphabetizing were missed by 84.4 percent of the students. Questions about the shelving of individual and collective and individual biographies were missed by 65 percent of the students. On

the posttest, all members of the experimental group answered 8 questions correctly which part of the group had missed on the pretest. The control group all answered correctly 4 questions which had been missed on the pretest. Minimal errors were made on the Reader's Guide section of the test.

Public Relations Value of Team Teaching

Team teaching promoted library services by teaching the classroom teacher about the facilities, materials, and support services available from the library and the librarian. James Kirk, Lee Vining High School teacher and counselor, asked that a workshop on library skills be held for the high school staff.[1] Kirk stated that he had learned so many new techniques about library use from teaching with the librarian that he wanted to share his experience with other teachers.[2] Edward Dilley, Lee Vining High School principal, agreed with Kirk and arranged a time and date for the workshop.[3] Ann Morris' study which identified the inadequacy of the library training of prospective teachers was supported by Kirk's statement about teacher needs for

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[1]Statement of James Kirk, high school counselor and teacher, in a personal interview, Lee Vining, California, April 28, 1976.

[2]Statement of Edward Dilley, Lee Vining High School Principal, in a personal interview, Lee Vining, California, May 5, 1976.

[3]Statement of James Kirk, high school counselor and teacher, in a personal interview, Lee Vining, California, May 12, 1976.

library instruction.[1]

RECOMMENDATIONS

Recommendations for the improvement of library instruction included the following components.

1. Librarians and classroom teachers continue their cooperative teaching.

2. Library instruction include units on search skills and retrieval techniques to help users locate and utilize available information.

3. The identification of the alphabetizing rules, shelving arrangements, and other library rules which are contrary to general practice and the development of methods to change or minimize these problems.

ADDITIONAL RESEARCH

Additional research in the following areas was suggested.

1. A handbook be written to facilitate student learning in the areas of interpersonal communication, the location and retrieval of recorded knowledge.

2. Another project involving larger groups of students, teachers, and librarians be conducted using the research design of this project to validate or

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[1]Ann Morris, "A Study of the Teacher's Knowledge of the Library," (unpublished research project, Brigham Young University, 1973).

invalidate the findings.

3. Library skills tests be produced with high coefficients of validity and reliability.

4. Projects be developed to evaluate the usefulness of special library filing rules, special shelving arrangements, and chronological ordering.

5. Studies be made on the use of team teaching as a public relations technique.

6. Library instruction programs be evaluated to determine the importance, value, and usability of each component.

invalidate the findings.

3. Library skills tests be produced with high coefficients of validity and reliability.

4. Projects be developed to evaluate the usefulness of special library filing rules, special shelving arrangements, and chronological ordering in the card catalog.

5. Studies be made on the use of team teaching as a public relations technique.

6. Library instruction programs be evaluated to determine the importance, value, and usability of each component.

In conclusion, the significance of the difference in student scores between pretests and posttests indicated the importance of providing students with instruction in library skills.

APPENDIX A

LIBRARY SKILLS TEST

NAME_____

SECTION_____

LIBRARY MATERIALS AND THEIR USE

This test covers basic information which you should know about the use of libraries. Read the instructions for each section of the test and follow them carefully.

ONLY ONE answer is correct for each question.

A. Card Catalog Alphabetizing

CLUE: When you use the drawers of the card catalog you will notice salmon colored guide cards with the words HOW TO USE THIS CATALOG on the tabs. Consult these cards if you have any questions.

On the next page are the labels for a portion of the drawers of the card catalog. Listed below the labels are the titles, authors, and subjects which can be found in our card catalog. Using the numbers on the drawers, indicate opposite each item the number of the drawer in which the label might be found.

Please put a zero (0) if you believe that the item could not be found in the drawers shown.

Please turn the page and begin your test. The best of luck to you.

22. Rom-Scientif	25. Ste-Syr	28. U.S.--HISTORY (con't)-Wal
23. Scientis-Sho	26. T-Transl	29. Wan-Wit
24. Shr-Sta	27. Transp-U.S.--HISTORY	30. Witc-Zwi

_____SNAKES	_____Treece, Henry, 1912-
_____SCIENCE FICTION	_____WIT AND HUMOR
_____ The story of gold	_____ Transport planes that made history
_____SPAIN	_____U.S.--BIOGRAPHY
_____ A seed shall serve	_____Shakespeare, William
_____SEEING EYE DOGS--FICTION	_____WITCHCRAFT
_____ St. Jerome and the lion	_____ 20,000 leagues under the sea

B. Reference Books and Library use

Read each of the following questions carefully. Give the letter of the answer in the space provided in front of the question number.

ONLY ONE ANSWER is correct for each question.

_____ 1. To find what books the library has on Russia one would look first in the (a) geography books, (b) card catalog, (c) Readers' Guide to Periodical Literature.

_____ 2. Clippings and pamphlets of general interest are kept in the (a) vocational file, (b) vertical file or information file, (c) card catalog.

_____ 3. The part of a book to consult in making a bibliography is the (a) title page, (b) table of contents, (c) index.

_____ 4. A good magazine in which to locate a story--one of fiction--is the (a) National Geographic, (b) Time, (c) Saturday Evening Post.

_____ 5. A catalog card referring to additional material on related subjects is called a (a) "see" reference, (b) "see also" reference, (c) guide card.

_____ 6. A good current events magazine is (a) Boys' Life, (b) Newsweek, (c) American Heritage.

_____ 7. Biographies of famous Americans, no longer living, will be found in (a) Who's Who in America, (b) Concise Dictionary of American Biography, (c) Current Biography.

_____ 8. Fiction is arranged on the shelves alphabetically by (a) author, (b) title, (c) subject.

_____ 9. Collective biography, which is classed under 920, is subarranged by (a) title, (b) author, (c) by the names of the people about whom the book is written.

_____10. The best place to look for very recent material on a subject is in the (a) card catalog, (b)

encyclopedia, (c) Readers' Guide to Periodical Literature.

_____11. A card referring one from a heading which is not used to a card giving the desired information is called a (a) "see" reference, (b) "see also" reference, (c) subject card.

_____12. Pseudonym means that (a) the writer is unknown, (b) there are two or more authors, (c) the writer is not using his true name.

_____13. The glossary of a book is (a) a list of illustrations, (b) definitions of words used in the book which the reader might not recognize, (c) table of contents.

_____14. The card catalog of the library may be likened to (a) the index of a book, (b) the table of contents of a book, (c) the glossary of a book.

_____15. Statistical facts about the governments of the world would be found in (a) Statistical Abstract of the United States, (b) Who's Who in America, (c) Statesman's Yearbook.

_____16. Individual biography, which is classed under 921, is subarranged by (a) person about whom the book is written, (b) the author, (c) the title.

_____17. Classified books are arranged by (a) size, (b) subject, (c) author.

_____18. The part of a book to use to quickly find a fact within the book is the (a) index, (b) appendix,

(c) bibliography.

_____19. The Dewey Decimal class number for American history is (a) 796, (b) 973, (c) 500.

_____20. In the card catalog, cards for books written by a person are arranged alphabetically (a) before, (b) after, (c) mixed in with cards for books about the same person.

_____21. The best way to remember an important passage in a library book is to (a) mark the margin, (b) take notes on paper, (c) underline it.

_____22. The part of the book giving the author's purpose in writing it is the (a) table of contents, (b) bibliography, (c) preface.

_____23. 800 is the Dewey Decimal class number for (a) applied arts, (b) literature, (c) science.

_____24. The Reader's Guide to Periodical Literature is arranged alphabetically by (a) author only, (b) by author and subject, (c) title only.

_____25. Books are listed in our card catalog by (a) author, title, subject, (b) author only, (c) title only.

_____26. Material on the city of St. Paul, Minnesota would be found in the card catalog drawer with (a) Sto-Tex, (b) Sac-Sel, (c) Pab-Pav, on the outside guide label.

_____27. Which group of numbers has the correct Dewey

Decimal arrangement?

(a)	(b)
914	914
914.13	914.2
914.2	914.4
914.25	914.13
914.4	914.25

_____28. Which group of names is correctly arranged by alphabetical rules?

(a)	(b)
McBride, George	MacBride, Robert
MacBride, Robert	Macdonald, Angus
Macdonald, Angus	McDonald, James
McDonald, James	McBride, George

_____29. Bartlett is the author of a famous (a) book of quotations, (b) index to plays, (c) poetry index.

_____30. To find information about a famous living American, look in (a) Concise Dictionary of American Biography, (b) Who's Who in America, (c) Webster's Geographical Dictionary.

_____31. To find a map showing the battlefields of the Civil War you would use (a) Webster's Dictionary Of Synonyms, (b) Webster's Biographical Dictionary, (c) Atlas of American History.

C. Catalog Card Entries

Read this author entry of a catalog card carefully and then answer the questions on the next page. Each question has ONLY ONE fully correct answer.

973.711 Coit, Margaret Louise, 1920-
Coi A fight for union. Houghton 1961
136p illus

A discussion of the Missouri Compromise, Webster-Calhoun debates, Texas revolution, John Brown's raid, and other events of the political and social upheavals of the mid-nineteenth century. Here are Jefferson, Clay, Calhoun, and Webster, whose principles, personalities, and actions play important parts in those pre-Civil War days when the test of union began.

1. U.S.--History--1815-1861 I Title

1. What is the Dewey Classification number?_____

   What is the author or Cutter number?_____

2. What is the "call number?"_____

3. What is the author's name?_____

   When was she born?_____Is she still living?_____

4. What is the title of the book?_____

5. Who published the book?_____

6. What is the date of publication?_____

7. How many pages does the book contain?_____

8. Quote the first three words of the annotation or summary of the book._____

The fight for union
973.711 Coit, Margaret Louise, 1920- TITLE
Coi The fight for union. Houghton 1961 CARD
136p illus

9. How to you know that this a title card, aside from the fact that it is so labelled? The reason for knowing it is a title card is true <u>for</u> all title cards.

9. _____

U.S.--HISTORY--1815-1861
973.711 Coit, Margaret Louise, 1920- SUBJECT
Coi The fight for union. Houghton 1961 CARD
136p illus

10. How do you know this is a subject card, aside from the fact that it is so labelled? The reason for knowing it is a subject card is true for all subject cards in our library._____

D. Readers' Guide to Periodical Literature

Following is an entry from the Readers' Guide to Periodical Literature. Please read it over and answer the questions below.

JUDO
Judo; mayhem with a gentle touch.
C. Miller. il Read Digest
87:137-41 S '65

1. What is the subject heading?_____
2. What is the title of the article?_____
3. Who is the author?_____
4. What does "il" mean?_____
5. In what magazine will you locate this article?_____

_____

6. On what page or pages does the article appear?_____
7. What is the full date of the magazine in which the article appears?_____
8. What information do you need to give the library helper in order to use this magazine?_____

_____

F. Card Catalog Alphabetizing

The following items are listed on the top line of a catalog card, please rearrange them in proper order as per instructions for each group. ONLY ONE answer is correct for each group.

1. Rearrange the list of titles in column 1 in correct alphabetical order in column 2.

Column 1	Column 2
The hatters	_____
The hat	_____
A hat is lost	_____
Hats are better	_____
The hat is on the leg of the table	_____
The hat and a dog	_____
Hats are on loan	_____

2. List the entries given in column 1 in correct card catalog order in column 2.

Column 1	Column 2
The maple leaf may turn red	_____
Maple	_____
Maple, Jane	_____
MAPLE, JANE	_____
A maple tree is pretty	_____
A maple leaf turned red	_____

3. Rearrange the following abbreviations in alphabetical order as they would be filed in the card catalog.

Write out the abbreviations and numbers. List in alphabetical order in column 2.

Column 1	Column 2
Mr.	_____
Dr.	_____
32	_____
Xmas	_____
St.	_____
Mrs.	_____
100	_____
1973	_____

4. Arrange the items in column 1 in proper card catalog order in column 2.

Column 1	Column 2
U.S.--HISTORY	_____
UNITED STATES	_____
U.S.--HISTORY--CIVIL WAR	_____
U.S.--HISTORY--COLONIAL PERIOD	_____
U.S.--HISTORY--BIBLIOGRAPHY	_____
U.S.--HISTORY--BIOGRAPHY	_____
U.S.--HISTORY--ARMED FORCES	_____
U.S.--HISTORY--1961-	_____
U.S.--HISTORY--1919-1933	_____
U.S.--HISTORY--REVOLUTION	_____

F. By this time, it must be apparent that there are some areas involved in the use of the library that you do not understand. Please list areas where training is needed.

APPENDIX B

STUDENT RESPONSES TO QUESTION F

STUDENT RESPONSES TO QUESTION F

I NEED TRAINING-

1. Dewey Classification System - 4 requests
2. Card catalog - 3 requests
3. Everything - 2 requests
4. Reference books and reference books in special areas
5. It's a bore!
6. Readers' Guide to Periodical Literature
7. Books on music theory
8. Subject cards
9. Library of Congress Classification
10. General training about use of the library
11. Alphabetizing
12. Biography arrangement

The two students who made the lowest grades on the test made the following responses.

13. Most of it, but don't use the library often
14. None that I know of

APPENDIX C

LIBRARY INSTRUCTION SAMPLES

REFERENCE BOOKS

Almanac	A collection of miscellaneous facts and statistical information; originally a projection of the coming year by days.
Atlas	A collection of maps, plates, diagrams, tables, or charts with or without explanatory text. Historical atlases include retrospective information.
Bibliography	A list of books or other materials with some relationship to each other; may be listed alphabetically by the author's last name or subdivided by subject or form.
Dictionary	An alphabetical listing of words with definitions, derivation, spelling, pronunciation, syllabication, usage, and current status. The biographical dictionary is an alphabetical listing of sketches about people; geographical dictionary is an alphed listing of terms about places; includes descriptions.
Directory	A list of names and addresses of persons, organizations, or institutions; may include purposes, dues, and names of officers.

Encyclopedia	An alphabetical or classified list of articles of varying length which provide an overview of a topic, including definition, description, background, and bibliography.
Gazetteer	A list, usually in alphabetical order, which provides geographical information and data about places; also called a geographical dictionary.
Handbook	A list of miscellaneous information usually contained in a small volume which can be conveniently held in the hand.
Index	A guide to where and how information can be found.
Yearbook	A list of the events of the past year in brief, concise form; also called an annual.

REFERENCE INTERVIEW

1. Students sit in pairs at small tables.
2. On a sheet of blank paper, each student draws a simple animal figure of his own choice.
3. Drawings are turned upside down on the table.
4. Pairs of students exchange tables.
5. One of the new pair of students picks up and looks at the drawing in front of him.
6. The student then describes the drawing to his partner in words without referring to the picture again.
7. The partner replicates the original drawing from the verbal instructions.
8. The partner doing the art work can ask as many questions as he wishes.
9. Students repeat the procedure with the second drawing.
10. The original and replicated drawings are compared and contrasted.
11. Class members discuss why some drawings are easier than others to duplicate.
12. The discrepancies between the pairs of drawings are evaluated and reasons for differences proposed.
13. Pictures of the aardvark drawn by famous artists from same set of written instructions are compared.
14. Problems of communication are related to library use.

TEN COMMANDMENTS OF COMMUNICATION

I. Thou shalt communicate clearly

II. Thou shalt speak and write in simple English.

III. Thou shalt listen as well as speak.

IV. Thou shalt use a variety of approaches.

V. Thou shalt seek to involve people.

VI. Thou shalt be honest.

VII. Thou shalt seek to inform thyself before attempting to inform others.

VIII. Thou shalt build thy house of communication upon a firm foundation of knowledge, interest, and cooperation.

IX. Thou shalt respect the rights and privileges of others and say nice words about their contributions.

X. Thou shalt respond to other people's needs as well as thine own.

LIBRARY GLOSSARY

Audiovisual Materials	Information sources in other than book format.
Bibliography	List of library materials available on a particular subject, in a specific form, or by an individual author; description of the physical book.
Biography	Articles or books about a person, or a group of people
Autobiography	Materials the author writes about himself.
Collective Biography	Materials about a group of people; often related in some way.
Book Card	Cards signed by library patrons acknowledging receipt of library materials.
Book Drop	Special container into which library materials can be delivered for return to the library.
Books	A bound collection of pages of paper or film on which information is recorded for retrieval.
Card Catalog	Index to the contents of a library usually printed on cards and filed alphabetically in a collection of drawers.
Catalog	An index to library holdings; may be in card, book, or microfiche format.
Carrel	A small, enclosed space in the library which

Carrel	can be used by an individual patron; a "wet" carrel refers to one which has electrical outlets for using audiovisual equipment.
Charging Desk Checkout Desk	The location in the library where library materials are charged (checked out) and discharged (checked in).
Circulation	Process of checking library materials and equipment in and out; also refers to the statistical reports of charging and discharging library materials.
Classified Materials	Arrangement or shelving of library materials by subject or form.
Communication	Process by which information is relayed from one person to another or from one source to another; may be visual, verbal, or tactical.
Data Banks	Collections of information available to inquirers.
Date Due	Dates stamped on library materials or cards upon checkout indicating when the materials are due back in the library.
Dewey Decimal Classification	Arrangements of all forms and subjects of information into ten main classes with subdivisions based on ten, expanded by decimal subclasses; uses mnemonics.
Easy Books	Picture books which can be read without reference to the text.
Fiction	Imaginary stories not necessarily fact based.

Filing Rules	Controls which govern the arrangement of library materials and indexes by number and/or alphabet.
Government Documents	Publications by a local, state, or federal governmental agency.
Information Desk	Location in the library where general facts about the use and arrangement of the library can be obtained.
Interlibrary Loan	Process of borrowing materials from another library.
Instructional Materials Center	Usually a school library with a large collection of audiovisual materials and equipment; also called a library or a media center.
Library	A collection of information sources and mediating personnel to help the user find the information he seeks.
Library of Congress Classification	Arrangement of subjects based on the letters of the alphabet; used primarily in libraries with very large collections.
Library of Congress Subject Headings	Alphabetical listing of descriptive words used to describe subject areas; includes cross references.
Magazines	Publications including stories, articles, pictures; issued at regular intervals.
Media	Information sources of all types in all formats.
Media Center	See library and instructional materials center.

Mnemonic	Repetition as a memory aid; a feature of the Dewey Decimal Classification System.
Networks	Systems of libraries which cooperate for collection development, interlibrary loan, interlibrary reference, and/or reciprocal borrowing.
Nonprint Materials	Carriers of information in visual, aural, or tactical formats.
On-line Retrieval Systems	Electronic connections to data bases for the acquition of information.
Pamphlets	Softbound printed materials with fewer than fifty pages.
Periodicals	Printed library materials, usually softbound, which are issued at regular or varied intervals; publication continuous.
Print Materials	Written library materials in which lettering is the primary medium.
Reference Book	An information source primarily referred to for specific facts; not read through.
Reference Desk	The area in the library where questions about the location and acquisition of knowledge and knowledge carriers are investigated.
Satellite Library	Library collection located away from the main collection; usually includes materials on specific, limited subjects.
Sears Subject Headings	An alphabetical listing of words and phrases used to describe subjects of library materials.

CARD CATALOG GLOSSARY

Added Entries	Notations at the bottom of a catalog card preceded by Roman numerals indicating where added information on the material is filed.
Annotation	A brief description of what the library material concerns or what is included.
Author Card	The top line of a catalog card that is closest to the left hand margin; may be the name of a person, association, or governmental agency.
Author Notation or Cutter Number	Usually the first two or three letters of the author's last name; may be the first two or three letters of the title. Cutter number is taken from a Cutter Table and is a numerical representation of the author's last name preceded by the first letter of the last name.
Book Catalog	A listing of the holdings of a library printed in book format; usually alphabetical by author, title, or subject, or any combination of the three elements.
Call number	A combination of numbers and letters of the alphabet printed in the upper left hand

Call number	corner of the catalog card which represent the library material's location on the library shelves; usually the same combination of letters and numbers are printed on the spine of the material and on the card and pocket.
Catalog Card	A card approximately 3" x 5" on which is printed the information about library materials; cards are filed, usually alphabetically, in the card catalog.
Class Number	The top line of the call number, which may be either numbers or letters, depending on the classification system used; i. e., usually numbers in the Dewey Decimal Classification System and letters in the Library of Congress Classification System.
Collation	The number of pages, the illustrations, the contents, the series.
Cutter Number	Combination of letters and numbers which represent the author's name; see also Author Notation.
Dictionary Catalog	Collection of catalog cards, including author, title, and subject cards, all filed in one alphabet.
Divided Catalog	Collection of catalog cards, divided into separate units and alphabetical arrangements

Divided Catalog	of authors, titles, subjects, or a combination of two of the above elements.
Guide Card	An oversized catalog card which extends above the regular catalog cards and shows the letter or letters of the alphabet immediately following it.
Imprint	Information following the title of the material on a catalog card which usually includes the place of publication, the name of the publisher, and the date of publication.
Integrated Catalog	Both print and nonprint library materials are listed in the same index, or catalog.
Location Notation	A note or group of letters above or below the call number which indicate a special location for that material.
Microfiche Catalog	A listing of the library holdings on a 4" x 6" film which can be viewed on a reader; serves the same purpose as the card catalog.
Notation	Letters and/or numbers on a catalog card which indicate the location, call number, or tracings for library materials.
Pseudonym	Name, other than his real name, under which a writer publishes library materials.
Publisher	Firm which supervises and produces library materials.

"See"	This term on a catalog card indicates that the information can be found in another location; a one way street from this location to where the information is.
"See also"	A direction on a catalog card which notes that additional information can be found in another place too; a two way street.
Series Note	The final element of the collation statement, usually bound by parentheses, showing that this work is a part of a group of similar materials, or a publisher's collection.
Subject Card	The top line on a catalog card usually printed in capital letters, often black, may be red, which indicates what the library material is about; occasionally printed in red with upper and lower case letters.
Subject Headings	Word or words on the bottom of a catalog card, preceded by Arabic numbers, which note the subject of the work.
Title Main Entry	The title of a work is listed on the top line of a catalog card closest to the left hand margin; used instead of an author entry.
Title Card	The title of the library material is listed in upper and lower case letters on the top line of the catalog card.
Tracings	Added entries on the bottom of catalog cards are preceded by Roman numerals, subjects by Arabic numbers.

AUDIOVISUAL MATERIALS GLOSSARY

Art Prints	Printed reproduction of any work of art.
Cassettes	Recording tape, mounted in a container, on which is recorded audio signals, either verbal or musical.
Charts	Sheet of paper or other material bearing any kind of information in list, picture, table, diagram, or other graphic form.
Community Resources	People, agencies, materials, facilities, or activities in the community which may be used to provide learning experiences.
Dioramas	Groups of figures in a realistic setting, a miniature scene.
Film Loop	A length of film, spliced together to form a continuous loop, on which is recorded a set of pictures or text; usually 8mm or Super 8mm film.
Film, Silent	Motion picture film on which no sound track is recorded; generally 16mm or 8mm with sprocket holes on both edges; projection speed is 16 frames per second.
Film, Sound	Motion picture film with self-contained sound track either optical or magnetic; projects at 24 frames per second.

Filmstrip, Silent	35mm film bearing a sequence of still pictures, usually with printed captions which, together with the pictures, convey the information to be communicated.
Filmstrip, Sound	35mm film sequence of still pictures accompanied by a sound track on records, tapes, or cassettes; film may be advanced manually or automatically.
Flash Cards	Various sizes of card stock, convenient for manipulation by hand, on which words, symbols, phrases, pictures, etc., are mounted, printed, or drawn. The cards may be held before the viewer for recognition training or for drill.
Games	An arrangement of materials providing instruction and testing of skills while motivating the learner by play and competition.
Globes	Spheres on which a cartograph of the earth or of the heavens is mounted.
Kits	Combinations of two or more types of learning materials intended to be used as a unit.
Maps	Representations of any geographic region, as of the earth's surface.
Microforms	Miniaturized photographic or printed copy of images on a film transparency, or opaque materials. Microforms may be on a reel, card, or unitized as in an aperature card.

Microforms

Aperature Card	A file card, usually 3½" x 7 3/8" with a rectangular hole cut into it to hold a single frame of 35mm microfilm. The card may be key-punched for computer retrieval.
Microcard	Micro-opaque card upon which images are reduced to approximately 1/18th of their original size; photographic copy; requires special reader.
Microfiche	Printed film transparency, usually 4" x 6", contains microimages, either positive or negative. Available in color or black and white; has various reduction ratios; special reader required.
Microfilm	Photographic film on which sequences of text or pictures are developed, usually 35mm film; may be 16mm; mounted on reel or in cassette.
Microprint	Micro-opaque card, usually 6" x 9" on which microimages are printed; needs reader.
Ultra-microfiche	Film transparency on which microdots are printed; reduction ratio to 48,000 to 1; special reader required.
Models	Reproductions of the real thing made with synthetic material; may be reduced, enlarged, or actual size; a substitute which may or may not be fully operational.
Posters	Visual combinations of bold design, color

Posters	and message intended to hold one's attention to receive the message; may be oversized.
Realia	The real thing, or a sample of it, used for instruction.
Recording, Disc	Reproduction of sound on flat, circular plastic, speeds of 33 1/3, 45, or 78rpm.
Recording, Tape	Sounds reproduced on magnetic tape, usually at speeds of 3 3/4 or 7½ips.
Slides	Single frames of transparent film materials on which images are recorded for projection; usually mounted in a 2" x 2" frame; may be accompanied by sound on record, tape, or cassette.
Study Prints	A set of pictures on a specific subject.
Transparencies	Projectuals printed, written, or photographed on transparent film; usually 10" x 10".
Videotape	Recordings of sound and pictures on magnetic or optic tape or discs; may be mounted in cassettes; usually ½" or 3/4".
Vertical File	Newspaper clippings, pictures, pamphlets, brochures, and free and inexpensive ephemeral materials filed on edge in a standard filing cabinet; also called an information file.
Viewmaster Slides	Paired stereoscopic slides designed to give the illusion of seeing pictures in the third dimension.

PARTS OF A BOOK

Appendix	A collection of documents or other source materials referred to in the book, but omitted from the main text.
Bibliography	A list of sources used in the preparation of the book, or suggested for additional information on the subject of the book.
Cover	Soft or rigid material which protects three sides of the book.
Footnote	Explanatory material or reference to other information which supports or amplifies the text; usually located at the bottom of each page, or at the end of each chapter or the text.
Glossary	An alphabetical list of words from the text with definitions; may include technical or foreign words.
Illustrations	Pictures, photographs, tables, diagrams, or other graphic representations used to supplement text description.
Index	A list, usually alphabetical, of all the topics, people, and places mentioned in the book; indexes may be divided according to subject, form, etc.

Maps	Pictorial representations of the geographic locations mentioned in the book.
Notes	Added information about the subject, author, publishing, etc.
Pagination	The number of pages in the book, usually the last numbered page. Books without page numbers are referred to as unpaged.
Preface	A list of the author's reasons for writing the book; may include acknowledgements of assistance given by persons or organizations; sometimes called the foreword or acknowledgements.
Spine	The back of the book which usually has printed on it the name of the author and the title of the work; sometimes includes the call number.
Table of Contents	An outline showing the divisions of the text into chapters or parts; may include pagination; lists of tables, maps, or other illustrative materials; appendixes; indexes; etc.
Text	The recorded information included in the main body of the work.
Title Page	Usually one of the first printed pages in a book; includes the official title of the work, the name or names of the author(s), the name and location of the publisher, and sometimes the printing or copyright date.

ALPHABETIZING IN THE CARD CATALOG

REMEMBER NOTHING COMES BEFORE SOMETHING!!!!

In general, all catalog cards are filed in one alphabet.

Articles (a, an, the) at the beginning of a title are disregarded in filing. File by the next word. Beginning articles in a foreign language (el, le, etc.) are also disregarded.

Words are alphabetized letter by letter to the end of the word, then word by word to the end of the line, disregarding punctuation.

California, William	CALIFORNIA--GOLD DISCOVERIES
CALIFORNIA	CALIFORNIA IN ART
California. Dept. of Education	California Indian days
California gold days	California's climates

The shorter word comes first; thus the entry NEW SALEM comes before NEWS.

Most abbreviations or shortened words are filed as though they were spelled out.

Xmas trio	Mister Shortstop
Christmas wanderings	Mr. Wilmer
Dr. Dan	St. Bartholomew
Doctor Doolittle	Saint Basil

However, MRS. is filed as MRS.

Titles beginning with numerals are filed as pronounced.

101 Best Songs filed as One Hundred and One Best Songs

Proper names beginning with Mc, M', and Mac are alphabetized as if they were all spelled Mac.

McAdam, Roger William	MACHINERY
MACARTHUR, DOUGLAS	M'Orleans, John
Machiavelli, Niccolo	Mac Williams, Joseph

When the same word appears in more than one kind of heading, individual personal names are followed by all other entries arranged in one alphabet.

London, Jack	London Bridge is falling down
LONDON, JACK	LONDON--FICTION
LONDON	LONDON--FIRE, 1666--FICTION

Entries for materials written by a person precede entries for materials written about that person.

Shakespeare, William Ten great plays	SHAKESPEARE, WILLIAM To William Shakespeare (Title entry)
SHAKESPEARE, WILLIAM Neilson, Francis Shakespeare and the Tempest	SHAKESPEARE, WILLIAM Webb, Nancy Will Shakespeare and America

Identical subject and title entries are subarranged by main entries.

The American buffalo (Title main entry)	BISON Allen, Joel Asaph The American bison
The American buffalo Ambrus, Victor G.	BISON The American buffalo (Title main entry)
The American buffalo Johnson, Oliver T.	BISON Johnson, Oliver T. The American buffalo
The American buffalo Wells, Agnes	BISON Wells, Agnes The American buffalo
The American buffalo Zim, Herbert	

Arrange a subject and its subdivisons in the following order: subject without subdivision; subject with subdivisions a through historx; history subdivisions, arranged chronologically; history subdivisions arranged alphabetically; subject with subdivisions Hit to Z.

GREAT BRITAIN

GREAT BRITAIN--HISTORY

GREAT BRITAIN--HISTORY--
PLANTAGENETS, 1154-1399

GREAT BRITAIN--HISTORY--
TUDORS, 1485-1603

GREAT BRITAIN--HISTORY--
STUARTS, 1603-1714

GREAT BRITAIN--HISTORY--
DICTIONARIES

United States

U.S.--BIOGRAPHY

U.S.--HISTORY--CIVIL WAR

U.S.--HISTORY--WAR OF 1898

U.S.--HISTORY--1919-1933

U.S.--HISTORY--1961-

U.S.--HISTORY--ARMED FORCES

U.S.--HISTORY--BIBLIOGRAPHY

U.S.--HISTORY--BIOGRAPHY

U.S.--HISTORY--SOURCES

READER'S GUIDE TO PERIODICAL LITERATURE

1. Define the following words:

   a. Periodical_____

   b. Cumulative_____

   c. Abbreviation_____

   d. By-line_____

2. An entry from the Reader's Guide follows. Please read it carefully and answer the questions.

   BOXING
   Chip off the old stumbling block; J. Quarry - R. Lyle-bout. T Maule. il pors Sports Illus 38:60+ F 19 '73

   a. What is the subject heading?_____

   b. What is the title of the article?_____

   c. Who is the author?_____

   d. What does "il" mean?_____

   e. What does "pors" mean?_____

   f. In what magazine will you locate the article?_____

   g. On what page or pages does the article appear?_____

   h. What is the full date of the magazine in which this article appears?_____

   i. What is the number of the volume of the magazine in which the article appears?_____

   j. On which page of the periodical does the volume number usually appear?_____

A STORY ABOUT THE DEWEY DECIMAL SYSTEM OF CLASSIFICATION

(The Story of the Numbers Used for Nonfiction Books)

Some years ago Mr. Melvil Dewey devised a system of classifying books which is used in many libraries. He chose certain main subjects and numbers, so that all nonfiction books on the same subject would be together on the shelf. He chose these subjects by imagining himself to be a prehistoric or primitive man. He asked himself questions he thought such a man would have asked.

100

Who am I?

PHILOSOPHY AND PSYCHOLOGY
(Man thinks about himself.)

200

Who made me?

RELIGION
(Man thinks about God.)

300

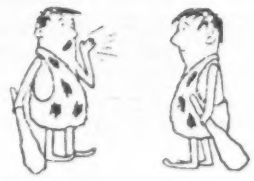
Who is the man in the next cave?

SOCIAL SCIENCES
(Man thinks about other people.)

400

How can I make that man understand me?

PHILOLOGY (Language)
(Man learns to communicate with others through words.)



500

How can I understand nature and the world about me?

SCIENCE
(Man learns to understand nature on the land, in the sea, and in the sky.)

600

How can I use what I know about nature?

APPLIED SCIENCE AND USEFUL ARTS

(Primitive man learned about fire and how to make weapons. Man through the ages learned about the wheel, about medicine, planting crops, cooking food, building bridges, and how to make all the things we use.)

700

How can I enjoy my leisure time?

FINE ARTS AND RECREATION

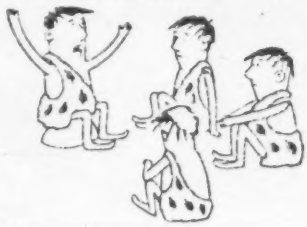
(By this time, primitive man had more time to do the things he enjoyed. He learned how to paint pictures and to create music. He also learned how to dance and to play games.)

800

How can I give to my children a record of man's heroic deeds?

LITERATURE

(Man became a storyteller. He creates sagas, fables, epics, poetry, and plays about his ancestors and the people he knew. Later, man put these into writing for all people to read.)



900

How can I leave a record for men of the future?

HISTORY GEOGRAPHY BIOGRAPHY

(So man began to write about events that had occurred everywhere, and about people who had participated in these events.)

000

GENERAL WORKS

The numbers up to 100 are used for bibliographies, books about books, and for books which contain information on many subjects such as encyclopedias and other reference books.

Reprinted from SCHOOL LIBRARY JOURNAL, February 1961; copyright, R. R. Bowker Company, 1961.

LIBRARY OF CONGRESS CLASSIFICATION

A	GENERAL WORKS--POLYGRAPHY
AC	Collections
AE	Encyclopedias
AG	General reference works
AI	Indexes
AM	Museums
AN	Newspapers
AP	Periodicals
AS	Societies. Academies
AZ	History of knowledge
B	PHILOSOPHY
B	Collections. History. Systems
BC	Logic
BD	Metaphysics
BF	Psychology
BH	Esthetics
BL-BX	Religions
C	HISTORY--AUXILIARY SCIENCES
CB	History of civilization
CC	Antiquities
CD	Archives
CE	Chronology
CJ	Numismatics
CN	Epigraphy
CR	Heraldry
CS	Genealogy
CT	Biography
D	HISTORY AND TOPOGRAPHY (Except America)
D	General history
DB-DQ	Europe
DR	Turkey and Balkan countries
DS	Asia
DT	Africa
DU	Australia and Oceania
DX	Gipsies
E	AMERICA (GENERAL) AND UNITED STATES (GENERAL)
F	UNITED STATES (LOCAL) AND AMERICA EXCEPT THE UNITED STATES
G	GEOGRAPHY--ANTHROPOLOGY
GA	Mathematical and astronomical geography
GB	Physical geography
GC	Oceanology and oceanography
GF	Anthropogeography
GN	Anthropology
GR	Folklore
GT	Manners and customs (General)
GV	Sports and amusements. Games
H	SOCIAL SCIENCES
HA	Statistics
HB-HJ	Economics
HM-HX	Sociology
I	(Open class)
J	POLITICAL SCIENCE
K	LAW
KF	Law of the United States
L	EDUCATION
LA	History of education
LB	Theory and practice of education
LC	Special forms, relations and applications
LD-LG	Universities and colleges
LT	Textbooks
M	MUSIC
M	Music
ML	Literature of music
MT	Musical instruction and study
N	FINE ARTS
N	Visual arts
NA	Architecture
NB	Sculpture
NC	Drawing. Design. Illustration
ND	Painting
NE	Print media
NK	Decorative arts. Applied arts.
NX	Arts in general
O	(Open class)

LIBRARY OF CONGRESS CLASSIFICATION

P	LANGUAGE AND LITERATURE	S	AGRICULTURE--PLANT AND ANIMAL INDUSTRY
P	Philology and linguistics	S	Agriculture (General)
PA	Classical languages and literatures	SB	Plant culture (General)
PB	Modern European languages	SD	Forestry
PC	Romance languages	SF	Animal culture
PD	Germanic (Teutonic) languages	SH	Fish culture and fisheries
PE	English languages	SK	Hunting sports
PF	Dutch languages		
PG	Slavic languages	T	TECHNOLOGY
PH	Finno-Ugrian and Basque languages		
PJ	Oriental languages and literatures	T	Technology (General)
PL	Languages and literature of Eastern Asia, Oceania, Africa	TA	Engineering (General)
		TC	Hydraulic engineering
PM	Hyperborean, American, and artificial languages	TD	Sanitary and municipal engineering
		TE	Roads and pavements
PN	Literary history and collections	TF	Railroad engineering and operation
PQ	Romance literatures	TG	Bridges and roofs
PR	English literature	TH	Building construction
PS	American literature	TJ	Mechanical engineering and machinery
PT	Teutonic literatures	TK	Electrical engineering and industries
PZ	Fiction and juvenile literature	TL	Motor vehicles. Cycles. Aeronautics
		TN	Mineral industries. Mining & metallurgy
Q	SCIENCE	TP	Chemical technology
		TR	Photography
Q	Science (General)	TS	Manufactures
QA	Mathematics	TT	Trades
QB	Astronomy	TX	Domestic science
QC	Physics		
QD	Chemistry	U	MILITARY SCIENCE
QE	Geology		
QH	Natural history	U	Military science (General)
QK	Botany	UA	Armies. Organization and distribution
QL	Zoology	UB	Administration
QM	Human anatomy	UC	Maintenance and transportation
QP	Physiology	UD	Infantry
QR	Bacteriology	UE	Cavalry
		UF	Artillery
R	MEDICINE	UG	Military engineering
		UH	Other services
R	Medicine (General)		
RA	State medicine. Hygiene	V	NAVAL SCIENCE
RB	Pathology		
RC	Practice of medicine	V	Naval science (General)
RD	Surgery	VA	Navies. Organization and distribution
RE	Opthalmology	VB	Naval administration
RF	Otology. Rhinology. Laryngology	VC	Naval maintenance
RG	Gynecology and obstretics	VD	Naval seamen
RJ	Pediatrics	VE	Marines
RK	Dentistry	VF	Naval ordnance
RL	Dermatology	VG	Other services of navies
RM	Therapeutics	VK	Navigation
RS	Pharmacy and materia medica	VM	Shipbuilding and marine engineering
RT	Nursing		
RV	Botanic, Thomsonian and eclectic medicine	W,X,Y	(Open classes)
		Z	BIBLIOGRAPHY AND LIBRARY SCIENCE
RX	Homeopathy		
RZ	Miscellaneous schools and arts		

APPENDIX D

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SOURCES CITED

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